

ABSTRACT OF THE INVENTION

A floating point rasterization and frame buffer in a computer system  
5 graphics program. The rasterization, fog, lighting, texturing, blending, and  
antialiasing processes operate on floating point values. In one embodiment, a  
16-bit floating point format consisting of one sign bit, ten mantissa bits, and five  
exponent bits (s10e5), is used to optimize the range and precision afforded by  
the 16 available bits of information. In other embodiments, the floating point  
10 format can be defined in the manner preferred in order to achieve a desired  
range and precision of the data stored in the frame buffer. The final floating  
point values corresponding to pixel attributes are stored in a frame buffer and  
eventually read and drawn for display. The graphics program can operate  
directly on the data in the frame buffer without losing any of the desired range  
15 and precision of the data.